ΛATARI

COMPUTER

ENTHUSIASTS

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Taking off into a new era with ACE
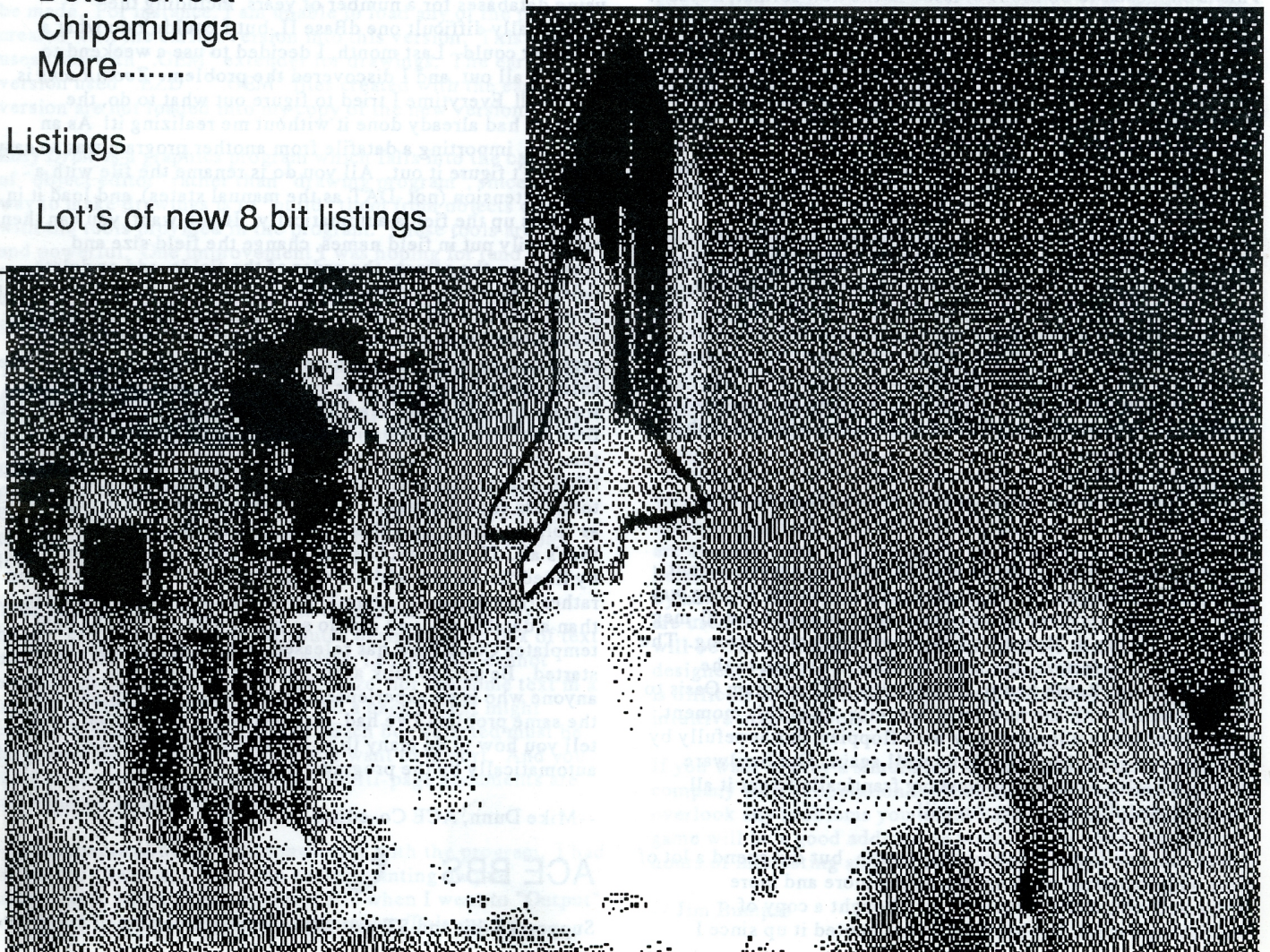
News and Reviews

We have recently had a number of requests from you about the relative lack of 8-bit articles in the newsletter lately, and a request for more. Actually, the amount has been about the same, but our newsletter is now much larger and so it seems less. Most of the programs have been 8-bit, and many of the reviews, however, we have not made clear in some cases which are 8 bit and which are 16 bit. We want to run more 8-bit reviews, but, except for Xlent, no one has sent anything for us to review and we cannot afford to buy much. The ST software vendors have been sending a lot, so more appears in the newsletters about ST products. You can help a lot by sending in reviews of new 8-bit programs you buy -- on a disk if possible. We will continue to try to balance the amount for each if future issues and better identify which is for 8-bit or 16-bit. We have no plans to split into 2 groups as many clubs have.

The club has recently reorganized many of the responsibilities. Buddy Hammerton will now be in charge of layout, he will be using Publishing Partner and a laser printer from a commercial company. Larry Gold will help him and print out the listings. This is supposed to be the first issue in the new format; hopes it all works out and not as our BBS (see below). Jim Bumpas will continue to do the actual editing -- deciding the articles used, typing in some of them, and editing. I will still collect the articles, choose the articles from the other newsletters and provide it all to Jim. I will also continue to answer most of the letters, maintain the mailing list and be the liaison person between you, vendors and the club. Kirk Stockwell is our new president; he runs the meetings but is now directly involved in the newsletter. Ralph Walden will continue to be our sysop.The two most important jobs in the club have both changed hands. Our new 8-bit Librarian will be Nora Young. Nora has done a variety of jobs for the clubs over the years, including typing in the 8-bit listings for the newsletters, choosing the games printed, reviewing educational software, and now promises to greatly expand and write articles about the 8-bit library. Mike Rogers will take over the 16-bit library, also doing the type of things that Nora is doing for the 8-bit library. The reason these jobs are so important for the club is the membership fee does not cover the costs of the newsletter, let alone the BBS and we need you to buy disks to continue as before. The addresses for the above are on the back of the newsletter.

Speaking of the BBS -- we bought a bunch of new equipment for our BBS to expand to 30 megabytes because the 10 meg was full -- after we received all the equipment, we sold the 10-meg drive -- but, due to Murphy's Law, everything went wrong. The interface was defective, the hard disk did not speak to the controller card, Ralph had to re-write his BBS program Oasis to be compatible with the new interface, etc. As of this moment, we are running in a limited way with floppies, but hopefully by the time you read this, all will be well again. Our hardware genius, Charlie Andrews, is working frantically to get it all together, and if anyone can, he will.

I didn't do any formal reviews this month, but did spend a lot of time with two programs I am becoming more and more impressed with as I use them. I also bought a copy of Publishing Partner but have not event booted it up since I

heard that a new version will be out soon -- I sent in my registration card, and am waiting. The version I have has only one font option for a dot-matrix printer, which makes it very limited for me -- *Typesetter Elite* has many different fonts. The new version of *PaintPro* ($50, Abacus) with the *PrintPro Library #1* arrived and is great fun. It is GEM based, very easy to use, and does about everything. I am not an artist, but because of the GEM interface and the many options available on the menu at each edge of the screen, I was able to anything without ever opening the manual, a feature I highly prize. I understand from people who use the other paint programs that this one is more powerful and easier to use then *Degas* or *Neochrome*, but not as powerful than *Degas Elite*. Be sure to look at it if you need a paint program. Mike Rogers is preparing an article comparing the features of all of them for a future issue.

The other program is *ZoomRacks II* , which has had a lot written about it in the newsletter. On page 2 of the Nov 86 ACE Newsletter, I wrote about databases and how I convert the mailing list from one to another to test them. The first few times I used *ZoomRacks*, I had a great deal of trouble understanding it, but Mike Rogers, a new computer owner, found it very easy to use. That didn't make sense -- I've been using databases for a number of years, including the fiendishally difficult one dBase II, but I couldn't do what a beginner could. Last month, I decided to use a weekend to figure it all out, and I discovered the problem. *ZoomRacks* is too easy!! Everytime I tried to figure out what to do, the program had already done it without me realizing it! As an example, importing a datafile from another program was so easy I couldn't figure it out. All you do is rename the file with a .DTA extension (not .DAT as the manual states), and load it in -- it sets up the fields automatically. If you want, you can then very easily put in field names, change the field size and position on the screen, the order of the fields, add or delete fields in moments, or you can leave it the way it is. Took about 10 minutes to do it all, most of the time loading in the file. With *ZoomRacks* you can either see just the first line of your card lined up with many others on the screen or zoom in on the entire card. To update your subscriptions, all I need to do is sort by date if I want, search for your name, and change the date field without ever going into the card itself -- much faster to do then in other programs I've used. To print out the mailing label, you write a little program to put things as you wish -- took less then 5 minutes. If you want to add an instruction such as "please renew by:" then the date field, you just type it in -- that's all. If you want to print the names together rather than by fixed fields, you add a .? to the fieldname. (Eg. Mike Dunn rather than Mike   Dunn). ZoomRacks is also much more than a database -- you can do so much with it, and the new templates QuickView has released make it even easier to get started. Be sure to look at this and give it a chance. I think anyone who is an experienced database reviewer might have the same problem I've had, just remember the manual doesn't tell you how to do many things because they are done automatically by the program.

--Mike Dunn, ACE Co-editor

ACE BBS   📞

Supports 8-bit and ST call 24hrs/day Sun-Fri.

BUMPAS REVIEWS

I was wrong last month when I said I was unable to graph any data with the new *GEM VIP*. I was trying to create graphs from .NAT files which contained some graphing information. Once I reset the graph information and started entirely from scratch, I am able to create perfect graphs. I still cannot adequately print these graphs from the *GEM VIP*. No new graph printing program was supplied, and the former graph printing program I have does not print the graphs from the GEM version. I can do a system screen dump, but this includes all the GEM desktop stuff around the graph. So it's not really an adequluate solution, either. My best solution is to load the GEM .WKS file into the old version of *VIP* and do a screen dump. I hope *VIP* fixes this soon. And while they're at it, when will *VIP* be compatible with *Lotus v.2*? Wish, wish.

Easy Draw version 2 for the ST (MiGraph, 720 S. 333d St., #201, Federal Way, WA 98003, $80) is here. It's quite an improvement over the original version. By the way, the documentation ignores the previous version and appears to say this is the only version (nowhere is "version 2" used, nor is there any mention of any earlier version). This is unfortunate, because I believe some attention to the former version needs to be made. For instance, I am unable to load any of the pictures created with the earlier version into this version. This version uses files with ".GEM" extender for drawings. The earlier version used ".EZD". ".GEM" files created with the earlier version are not loaded into my copy of the new version.

Easy Draw is a graphics program which falls into the category of "object editor" rather than "drawing program", since the best way to make drawings is to "build" them from objects created with the tools provided in the program. These tools are many and powerful. One improvement I was hoping for (and did not find) is the ability to rotate objects in finer increments than 90 degrees. *Easy Draw* does not yet permit rotation of objects except in 90 degree increments.

The biggest improvement to this version is the ability to import ASCII text files from other programs into *Easy Draw*. This feature gives one a "desktop publishing" ability for only $80. This one feature alone can make this program a worthwhile purchase for many people. You have a wide range of text options in terms of point size and text attributes (underlining, etc.). There is only one font supplied with the program, but they promise up to 5 fonts soon, which they say may all be loaded into memory at once.

Your text must be broken up into as many different "text boxes" as you want for the attributes desired. Each box of text must contain the same text attributes; i.e., one box cannot contain text in more than one point size, nor can some text in a box be underlined and some not. So a page of text might contain several text object boxes. Each box selected must be large enough to contain the text you want to import. And you must create each page separately. Multi-page documents are not handled in this program.

I had a couple of other minor problems with the program. I had to use the "Save as..." function before printing output, otherwise it wrote over a previous file when I went to "Output" and opted to save from the dialog prompt. This can be destructive of data if you don't want the previous file overwritten. Quitting from the OUTPUT.PRG the program sometimes seems unable to find the .RSC file on the disk requiring me to restart the program from the desktop.

For those of you without laser printers or 24-pin printers, *Easy Draw* still has the best character font to a 9-pin printer I've yet seen (at least until Soft Logik sends out the upgraded font to *Publishing Partner* purchasers). This feature might make this program a must for those who want to produce printed material on a 9-pin printer.

CHICAMAUGA for the 8-bit Atari is a simulation of the Civil War battle of the same name. The program was created by Game Designer's Workshop in 1984, but has only just been picked up by Electronic Arts to distribute.

Game Designer's Workshop has a reputation (in the paper wargaming world) for creating the most accurate, biggest, and most complicated simulations on the market. Their greatest work is probably the series of games they did to simulate the entire European theatre of WW2 with separate games for the Russian campaign, Scandinavia, Spain, the Balkans, France, Poland, etc. *Chicamauga* appears to have the traditional GDW attention to detail. Fatigue, morale, ammunition, weapon type, and unit strength (down to the individual man and horse) seem to be accounted for here. One may play solitaire or against one or more other players (each with a command). The players give their orders to units with a joystick on a tactical map. One may switch from this map to a strategic map showing an overview of the entire (known) battlefield. One may limit intelligence to units actually encountered, or one may have all the units shown.

While giving orders, the screen displays information about the unit being addressed. The program has a nice touch in the ease with which one proceeds from unit to unit giving orders. It's not necessary to laboriously move the joystick to the next unit, hex by hex. Once orders are given, the screen goes to strategic scale to show the action. Blocks of color move around and encounter other blocks. Combat results in one or more blocks turning red which indicates casualties occur. This is a very dynamic and interesting part of the game. Kudos for the designers for giving players these strategic views of the action.

The only drawback I can see to the program is the quality of the map graphics. The information windows and other graphics are adequate, and perhaps good. But the map graphics are horrible in my opinion. When the map scrolls, it does so hex by hex and the whole screen seems to do a slow flicker. If you are used to the smooth scrolling power of Atari computers, this will be disconcerting. The terrain symbols seem to be poorly designed, creating a rather confused tactical map display which is difficult to read until you get used to it. I'm used to more intuitive map symbols.

If you want to play a simulation of a Civil War battle from a company with a reputation for historical accuracy and can overlook any problems you might have with the graphics, this game will be a good addition to your library. And you'll have hours of interesting and fun at your computer.

-- Jim Bumpas

Surreal-Time 🕐

What time is it? If you don't know, ask your computer. The Atari ST computers have a time and date function built in. That's probably not a surprise to you since almost everything you need is built into the ST; RS-232 & Centronics parallel interface, DMA port, mouse and joystick ports, numeric keypad, etc. The ST uses the date to flag data files with the date and time the file was added or last modified. If the file is on more than one disk, you can tell which is the most current by looking at the date-time in the directory window. Many programs also access the current date in order to insert it into your documents or to calculate the number of days between a future or past date and today's date. These are usually needed for financial calculations such as mortgage payment dates and also future values of investments. The dates are also used for more obvious things like calendars and clock displays. So what's the problem? Every time you turn the ST on, the date in the clock is the one Atari put into TOS, not the current date. You must manually enter the date using the control panel or some other program every time the ST is turned on in order for the dates to make any sense. I usually don't remember to do that. Do you?

If Atari left out something you need, someone else will provide it. There are now numerous battery powered clocks for the ST that keep the current date even when the computer is turned off. When you turn the computer on, the date is automatically set to the current date and time, usually by a program in an auto folder that gets the date from the battery clock and updates the system clock. There is nothing to remember and the date is always correct.

Some of these clocks are cartridges that plug into the cartridge slot. I've never tested any of these because I don't know what other products will use the cartridge slot, so I'm keeping the slot available. Other clocks are plugged inside the computer and use rechargeable batteries for power. The ones I've tested work well but I've recently heard of some problems due to the rechargeable batteries getting overcharged. One excellent product, *Micro-Time*'s clock (reviewed in Dec/Jan '87 ACE), allows some control of the charging rate to help eliminate the overcharging problem.

Now there is new concept in battery powered clocks available for the ST. It's called the *Surreal-Time Clock*. It was designed by Charles Smeton and Rob Cherney of Surreal Systems, P.O. Box 1492, Ellicott, MD 21043 and is distributed by Black Patch Systems, P.O. Box 501, Arnold, Maryland 21012. Phone 1-800-ATARI-02.

I was surprised at how small the *Surreal-Time Clock* is. It's the same size as a ROM chip, about one and a half inches by one-half inch by three fourths of an inch and that includes an IC, a socket and a battery. Installation is simple and the instructions are clear. The only tools needed are a small phillips and flat-blade screwdriver and some needle nose pliers. If you have a very old 520ST, you may also need a soldering iron to un-solder the RF shield. To install *Surreal-Time Clock*, the case is opened, the shield removed, one ROM is un-plugged, the *Surreal-Time Clock* is plugged into the ROM socket and the ROM chip is plugged back into the *Surreal-Time Clock*. The shield is then replaced and case is closed. I'm very careful so it took me twenty minutes. The

enclosed instructions are on three and a half pages and are quite detailed. You shouldn't have any problem installing *Surreal-Time Clock*.

Surreal-Time Clock differs from other internal clocks. First of all, *Surreal-Time Clock* doesn't use rechargeable batteries so there is no problem with over or under charging. Instead, there is an internal lithium cell that can't leak and is designed to last 10 years. When the ST is turned on, the *Surreal-Time Clock* automatically uses the ST's power to maximize the lifetime of the lithium cell. The *Surreal-Time Clock* is under software control and is supplied with programs that turn it on and off. If your ST will be left off for an extended period of time, you can run CLOCKOFF.PRG, one of the supplied programs, to turn off the clock and further conserve the battery. If you do run this, you will get a warning that the clock will be shut down and an option to cancel the request.

The clock is an accurate crystal oscillator with accuracy better than one minute per month. The *Surreal-Time Clock* is said to be more accurate than the clock circuitry within the ST. In order to correct for the less accurate system clock, the *Surreal-Time Clock* updates it every hour. I haven't been able to verify this precision because my watch isn't that accurate, but as close as I can measure, the accuracy is just over one minute per month. This means that even if you don't reset the clock for a year, the time could only be about twelve minutes off. This is certainly accurate enough for its purpose.

I've occasionally had clocks reset to zero after running some games that affect the clock's memory but this won't happen with the *Surreal-Time Clock*. It's completely independent of the ST and uses no memory locations so no program can accidentally affect it. Since there are supplied programs to turn the clock on and off and to initially set the time, it is possible for a program upset the clock but, according to Charles Smeton, this pattern would statistically be generated only once every 40 thousand years. I can't verify 40 thousand years, but I can say that the *Surreal-Time Clock* is the most accurate and consistent clock I've seen for the ST. It is the only one that I haven't had to reset during my testing.

There are several programs supplied with the *Surreal-Time Clock*. I've already mentioned programs to turn the battery on and off. The program that turns the battery on also allows you to set the time. This is only used when you first install the *Surreal-Time Clock* or if you've turned the battery off. Another program, RD-TIME.PRG, reads the time and date from the *Surreal-Time Clock* and transfers them to the system clock. This program should be in an auto folder on your boot disk.

And last but not least, is SURREAL.ACC, a desk accessory that I've placed on most of my disks. If this accessory is used, RD-TIME.PRG isn't needed. It takes only one accessory slot but when you click on it, a second menu drops down giving you six additional accessories. There is a digital clock, a calendar for the years from 1900 to 2099, an alarm clock with two modes, shut-off and repeat, a Free RAM size display and my favorite, the Menu Bar clock. This is an hour:minute clock that is displayed in the upper right above the menu bar of all your GEM applications and works in all resolutions. There are additional features such as writing the calendar to disk, displaying time in 12 or 24 hour mode or calculating the number of days between dates. Accessories such as this one

sometimes sell anywhere from $30 to $50 dollars and this one comes free with the *Surreal-Time Clock*. And as good as this program is, Surreal Systems is already planning additions and improvements.

The 520ST version of the *Surreal-Time Clock*, the version I'm reviewing, lists for $49.95. According to Charles Smeton, the 1040ST version contains an additional circuit board due to the 1040's component placement and it lists for $59.95. It should be available by the time you read this review.

I enjoy reviewing quality products and I've enjoyed reviewing the *Surreal-Time Clock*. If you are considering an internal clock, and you should, consider the *Surreal-Time Clock*. It's a winner.

--Steve Golden

THUNDER!

reprinted from The ReCharger

Batteries Included announced a new version of *Thunder! The Writers Assistant*, for the Atari ST. *Thunder!* now allows people with impaired hearing to use the programs real-time spelling checker. This version is available free upon request for the special "Hearing Impaired" Disk with the return of the original disk.

"Instead of using sound, this special version of *Thunder!* alerts you by blinking the screen. Now you can see when a spelling error has been detected. We have had many requests from people who like *Thunder!*, but may need a non-audio cue mechanism in order to detect the spelling checker while writing."

Way to go Batteries Included.

CRC/YMODEM

This article contains information about how to implement CRC and YMDOEM, gathered from a variety of source codes. C and 8 bit assembly source code are included in the article.

The CRC protocol uses an optional two character CRC-16 instead of the one character arithmetic checksum used by the original XMODEM protocol. CRC-16 guarantees detection of all single and double bit errors, all errors with an odd number of error bits, all burst errors of length 16 or less, 99.9969% of all 17-bit error bursts, and 99.9984% of all possible longer error bursts. By contrast, a double bit error, or a burst error of 9 bits or more can sneak past the XMODEM protocol arithmetic checksum.

The XMODEM/CRC protocol is similar to the XMODEM protocol, except that the receiver specifies CRC-16 by sending C (Hex 43) instead of NAK when requesting the FIRST packet. A two byte CRC is sent in place of the one byte arithmetic checksum.

XMODEM protocol with CRC is accurate provided both sender and receiver both report a successful transmission. The protocol is robust in the presence of characters lost by buffer overloading on timesharing systems.

YMODEM: The choice to use 1024 byte packets is expressed to the sending program on its command line or selection menu. An STX (02) replaces the SOH (01) at the beginning of the transmitted block to notify the receiver of the longer packet length. The transmitted packet contains 1024 bytes of data. The receiver should be able to accept any mixture of 128 and 1024 byte packets. The packet number is incremented by one for each packet regardless of the packet length.

The sender must not change between 128 and 1024 byte packet lengths if it has not received a valid ACK for the current packet. Failure to observe this restriction allows certain transmission errors to pass undetected.

If 1024 byte packets are being used, it is possible for a file to "grow" up to the next multiple of 1024 bytes. This does not waste disk space if the allocation granularity is 1k or greater. When 1024 byte packets are used with YMODEM batch transmission, the file length transmitted in the file name packet allows the receiver to discard the padding, preserving the exact file length and contents.

Figure 1. 1024 byte Packets

```
SENDER  RECEIVER
        C
STX 01 FE Data[1024] CRC CRC
        ACK
STX 02 FD Data[1024] CRC CRC
        ACK
STX 03 FC Data[1000] CPMEOF[24] CRC CRC
        ACK
EOT
        ACK
```

Figure 2. Mixed 1024 and 128 byte Packets

```
SENDER  RECEIVER
        C
STX 01 FE Data[1024] CRC CRC
        ACK
STX 02 FD Data[1024] CRC CRC
        ACK
SOH 03 FC Data[128] CRC CRC
        ACK
SOH 04 FB Data[100] CPMEOF[28] CRC CRC
        ACK
EOT
        ACK
```

Figure 3. Definitions

```
<soh>   01H
<eot>   04H
<ack>   06H
<nak>   15H
<can>   18H
<C>     43H
```

The changes to the Modem Protocol to replace the checksum with the CRC are straight forward. If that were all that we did we would not be able to communicate between a program using the old checksum protocol and one using the new CRC protocol. An initial handshake was added to solve this problem. The handshake allows a receiving program with CRC capability to determine whether the sending program supports the CRC option, and to switch it to CRC mode if it does. This handshake is designed so that it will work properly with programs which implement only the original protocol. A description of this handshake is presented in section 10.

Figure 4. Message Block Level Protocol, CRC mode

Each block of the transfer in CRC mode looks like: <SOH><blk #><255-blk #><--128 data bytes--><CRC hi><CRC lo> in which: <SOH> = 01 hex, <blk #> = binary number (starts at 01 increments by 1, and wraps 0FFH to 00H not to 01), <255-blk #> = ones complement of blk #, <CRC hi> = byte containing the 8 hi order coefficients of the CRC, <CRC lo> = byte containing the 8 lo order coefficients of the CRC.

CRC Calculation: To calculate the 16 bit CRC the message bits are considered to be the coefficients of a polynomial. This message polynomial is first multiplied by X^{16} and then divided by the generator polynomial ($X^{16} + X^{12} + X^5 + 1$) using modulo two arithmetic. The remainder left after the division is the desired CRC. Since a message block in the Modem Protocol is 128 bytes or 1024 bits, the message polynomial will be of order X^{1023}. The hi order bit of the first byte of the message block is the coefficient of X^{1023} in the message polynomial. The lo order bit of the last byte of the message block is the coefficient of X^0 in the message polynomial.

Figure 5. Example of CRC Calculation written in C

```
/* This function calculates the CRC used by the XMODEM/CRC Protocol
 * The first argument is a pointer to the message block.
 * The second argument is the number of bytes in the message block.
 * The function returns an integer which contains the CRC.
 * The low order 16 bits are the coefficients of the CRC.
 */
int calcrc(ptr, count)
char *ptr;
int count;
$(
   int crc, i;

   crc = 0;
   while (--count >= 0) $(
   crc = crc ^ (int)*ptr++ << 8;
   for (i = 0; i < 8; ++i)
      if (crc & 0x8000)
   crc = crc << 1 ^ 0x1021;
      else
   crc = crc << 1;
   $)
   return (crc & 0xFFFF);
$)
```

CRC File Level Protocol Changes: The only change to the File Level Protocol for the CRC option is the initial handshake which is used to determine if both the sending and the receiving programs support the CRC mode. All Modem Programs should support the checksum mode for compatibility with older versions. A receiving program that wishes to receive in CRC mode implements the mode setting handshake by sending a <C> in place of the initial <nak>. If the sending program supports CRC mode it will recognize the <C> and will set itself into CRC mode, and respond by sending the first block as if a <nak> had been received. If the sending program does not support CRC mode it will not respond to the <C> at all. After the receiver has sent the <C> it will wait up to 3 seconds for the <soh> that starts the first block. If it receives a <soh> within 3 seconds it will assume the sender supports CRC mode and will proceed with the file exchange in CRC mode. If no <soh> is received within 3 seconds the receiver will switch to checksum mode, send a <nak>, and proceed in checksum mode. If the receiver wishes to use checksum mode it should send an initial <nak> and the sending program should respond

to the <nak> as defined in the original Modem Protocol. After the mode has been set by the initial <C> or <nak> the protocol follows the original Modem Protocol and is identical whether the checksum or CRC is being used.

Receive_Program_Considerations: There are at least 4 things that can go wrong with the mode setting handshake.

  1. the initial <C> can be garbled or lost.
  2. the initial <soh> can be garbled.
  3. the initial <C> can be changed to a <nak>.
  4. the initial <nak> from a receiver which wants to receive in checksum can be changed to a <C>.

The first problem can be solved if the receiver sends a second <C> after it times out the first time. This process can be repeated several times. It must not be repeated too many times before sending a <nak> and switching to checksum mode or a sending program without CRC support may time out and abort. Repeating the <C> will also fix the second problem if the sending program cooperates by responding as if a <nak> were received instead of ignoring the extra <C>.

It is possible to fix problems 3 and 4 but probably not worth the trouble since they will occur very infrequently. They could be fixed by switching modes in either the sending or the receiving program after a large number of successive <nak>s. This solution would risk other problems however.

Sending_Program_Considerations: The sending program should start in the checksum mode. This will insure compatibility with checksum only receiving programs. Anytime a <C> is received before the first <nak> or <ack> the sending program should set itself into CRC mode and respond as if a <nak> were received. The sender should respond to additional <C>s as if they were <nak>s until the first <ack> is received. This will assist the receiving program in determining the correct mode when the <soh> is lost or garbled. After the first <ack> is received the sending program should ignore <C>s.

Data Flow Examples with CRC Option: Here is a data flow example for the case where the receiver requests transmission in the CRC mode but the sender does not support the CRC option. This example also includes various transmission errors. <xx> represents the checksum byte.

8-bit disks: ** Best of ACE #17 **
BOMBESC.13 -- The object to escape from a building to safe black square before a time bomb explodes.
BLITZ -- You are the pilot of an old bomber. The engines failed. The only change to land safely is to bomb all the deserted buildings flat.
CRUNCHER.ASM -- A number cruncher that is an aid for writting math routines in assembly lauguage.
SONAR -- is a submarine hunt game in the classic style of seeking targets by deduction and logic.
MAKEWD -- Use the ENTER command. Make as many words as you can out of the word(s) displayed at top of screen. Need to make your own file.
FIXACEC.C -- Fixs a bug in the ACE complier.
EXPLODE -- is a two player game. The object of Explosion is to leave you opponent with no pieces on the board.
HHORRIS.9 -- Horris is a hungry Atarian caterpillar. Horris needs to eat as many fruits as he can. Horris has a tendency to rush at things and knock himself out on the walls in his garden.
WANDERER.15 -- is a 3D maze game in which we can travel through a maze as though we were actually inside it.

ST Library

— Ralph Walden, Mike Rogers ST Librarians

WE ARE USING A NEW FORMAT FOR THE NEWSLETTER PLEASE LET KNOW WHAT YOU THINK ABOUT IT!

THE CHASE

REPRINTED

```
1 REM ***************************
*
2 REM **        THE CHASE      *
*
3 REM **          "by"         *
*
4 REM **    NIGEL LLEWELLYN    *
*
5 REM ** ---------------------- *
*
6 REM ** PAGE 6 MAGAZINE - ENGLAND *
*
7 REM ***************************
*
8 REM
10 OPEN #1,4,0,"K:"
20 POKE 559,0:GOSUB 1000:GOSUB 800:R
EM POKE 559,34
30 REM GOSUB 800
40 PL=-1
49 REM "** CHOOSE PLAYER **"
50 PL=PL+1:IF PL>PLAYERS THEN PL=0
51 F=PL+1:POSITION 3,0:ON F GOTO 52,
53,54,55
52 ? #6;" blue to play":GOTO 56
53 ? #6;" red to play ":GOTO 56
54 ? #6;"WHITE TO PLAY":GOTO 56
55 ? #6;"GREEN TO PLAY"
56 POSITION 0,20:? #6;"    PRESS
    TO        ROLL DICE        ":COLOR 0
:PLOT 12,23:POKE 53248,0
57 FOR I=1 TO 3:SOUND 0,63,10,8:POSI
TION 9,20:? #6;"     ":FOR D=1 TO 50
:NEXT D
58 SOUND 0,126,10,8:POSITION 9,20:?
#6;"START":FOR D=1 TO 50:NEXT D:NEXT
 I:SOUND 0,0,0,0
59 IF PEEK(53279)<>6 THEN 59
60 POSITION 0,20:? #6;"
          ":POKE 53248
,144
69 REM "**ROLL DICE ROUTINE **"
70 DICE=INT(RND(0)*6)+1:DICE1=DICE
71 FOR D=0 TO 50:SOUND 0,50+D,10,10
72 N=INT(RND(0)*6)+33
73 COLOR N:PLOT 12,23:SOUND 0,0,0,0
74 FOR X=0 TO 2:NEXT X:NEXT D
75 COLOR DICE+32:PLOT 12,23:POKE 77,
0:POKE 764,255
99 REM "** BEGIN TURN **"
100 IF DICE=6 AND BASE(F)+HOME(F)=4
THEN GOTO 500
102 IF DICE=6 AND BASE(F)>0 THEN GOT
O 115
105 IF BASE(F)+HOME(F)<4 THEN GOTO 1
50
110 POSITION 0,20:? #6;" sorry no co
unters        to move":FOR D=0 TO 50
```

```
00:NEXT D:GOTO 50
115 POSITION 0,20:? #6;" press M to
move or R to release counter"
120 GET #1,K
125 IF K=77 AND BASE(F)<4 THEN GOTO
150
130 IF K=82 AND BASE(F)>0 THEN GOTO
500
135 GOTO 120
149 REM ** MOVE COUNTER **
150 POSITION 0,20:? #6;"  WHICH COUN
TER DO   YOU WANT TO MOVE    "
155 GET #1,K
160 IF K<49 OR K>52 THEN GOTO 155
165 E=K-48:T=(PL*4)+E
170 IF AC(T)<>1 THEN GOTO 155
172 POSITION 0,20:? #6;"

          "
175 ON DIR(T) GOTO 180,185,190,195
180 Z(T)=PEEK(CP(T)+1):POKE CP(T),CL
(T):CP(T)=CP(T)+1:GOTO 200
185 Z(T)=PEEK(CP(T)-1):POKE CP(T),CL
(T):CP(T)=CP(T)-1:GOTO 200
190 Z(T)=PEEK(CP(T)-20):POKE CP(T),C
L(T):CP(T)=CP(T)-20:GOTO 200
195 Z(T)=PEEK(CP(T)+20):POKE CP(T),C
L(T):CP(T)=CP(T)+20
200 POKE CP(T),CC(T):CL(T)=Z(T)
205 IF Z(T)=13 AND DICE>1 THEN GOTO
320
210 IF Z(T)=13 THEN GOTO 600
249 REM "** CHECK FOR DIRECTION **"
250 IF CP(T)=TL+47 OR CP(T)=TL+161 O
R CP(T)=TL+171 THEN DIR(T)=1
255 IF CP(T)=TL+247 OR CP(T)=TL+371
OR CP(T)=TL+257 THEN DIR(T)=2
260 IF CP(T)=TL+167 OR CP(T)=TL+241
OR CP(T)=TL+367 THEN DIR(T)=3
265 IF CP(T)=TL+51 OR CP(T)=TL+177 O
R CP(T)=TL+251 THEN DIR(T)=4
270 ON PL+1 GOTO 280,290,300,310
280 IF CP(T)=TL+203 THEN DIR(T)=1
283 IF CP(T)=TL+243 THEN DIR(T)=3
286 GOTO 350
290 IF CP(T)=TL+215 THEN DIR(T)=2
293 IF CP(T)=TL+175 THEN DIR(T)=4
296 GOTO 350
300 IF CP(T)=TL+89 THEN DIR(T)=4
303 IF CP(T)=TL+87 THEN DIR(T)=1
306 GOTO 350
310 IF CP(T)=TL+329 THEN DIR(T)=3
313 IF CP(T)=TL+331 THEN DIR(T)=2
315 GOTO 350
320 ON PL+1 GOTO 325,330,335,340
325 DIR(T)=2:GOTO 350
330 DIR(T)=1:GOTO 350
335 DIR(T)=3:GOTO 350
340 DIR(T)=4
```

```
349 REM "** REM CHECK FOR NEXT MOVE
**"
350 SOUND 2,100,1,10:SOUND 2,0,0,0:F
OR D=0 TO 100:NEXT D
355 DICE=DICE-1:IF DICE>0 THEN GOTO
175
399 REM "** WHAT HAVE I LANDED ON **
"
400 FOR I=1 TO 16
405 IF Z(T)=CC(I) THEN POP :GOTO 425

410 NEXT I
415 IF DICE1=6 THEN GOTO 56
420 GOTO 50
425 POKE BP(I),CC(I):CL(T)=CL(I):DIR
(I)=DIR1(I)
430 B=INT(I/4.2)+1:BASE(B)=BASE(B)+1
:AC(I)=0
435 GOTO 415
499 REM "** RELEASE A COUNTER **"
500 POSITION 0,20:? #6;"WHICH COUNTE
R DO  YOU WANT TO RELEASE    "
505 GET #1,K
510 IF K<49 OR K>52 THEN GOTO 505
515 E=K-48:T=(PL*4)+E
520 IF PEEK(BP(T))=0 THEN GOTO 505
525 XX=PEEK(SP(T))
530 POKE BP(T),0:POKE SP(T),CC(T):CP
(T)=SP(T):BASE(F)=BASE(F)-1
535 AC(T)=1
540 IF T<5 THEN CL(T)=204
545 IF T>4 AND T<9 THEN CL(T)=76
550 IF T>8 AND T<13 THEN CL(T)=12
555 IF T>12 THEN CL(T)=140
559 REM "*CHECK IF START WAS OCCUPIE
D*"
560 FOR I=1 TO 16
565 IF XX=CC(I) THEN POP :GOTO 580
570 NEXT I
575 GOTO 51
580 POKE BP(I),CC(I):AC(I)=0:DIR(I)=
DIR1(I)
585 B=INT(I/4.2)+1:BASE(B)=BASE(B)+1

590 GOTO 575
599 REM "** REACH HEAD-QUATERS **"
600 FOR H=50 TO 0 STEP -2
605 SOUND 0,H,10,10
610 POKE TL+209,CC(T)
615 FOR J=0 TO H/2:NEXT J
620 POKE TL+209,13
625 FOR J=0 TO H/2:NEXT J
630 NEXT H:SOUND 0,0,0,0:AC(T)=2
635 HOME(F)=HOME(F)+1:IF HOME(F)=4 T
HEN GOTO 650
640 GOTO 415
649 REM "** END OF GAME **"
650 GRAPHICS 17:POKE 16,64:POKE 5377
```

8

```
4,64:POKE 756,CHSET:POKE 708,12:POKE
 709,0:POKE 53248,0
655 FOR I=0 TO 23
660 COLOR 7:PLOT 0,I:DRAWTO 19,I:NEX
T I
665 ON F GOTO 670,671,672,673
670 POSITION 3,5:? #6;" BLUE  PLAYER
 ":GOTO 680
671 POSITION 4,5:? #6;" RED PLAYER "
:GOTO 680
672 POSITION 3,5:? #6;" WHITE PLAYER
 ":GOTO 680
673 POSITION 3,5:? #6;" GREEN PLAYER
 "
680 POSITION 8,6:? #6;" IS "
681 POSITION 4,7:? #6;" THE WINNER "
685 POSITION 3,15:? #6;" PRESS ANY K
EY ":POSITION 6,16:? #6;" TO RUN "
690 X=USR(1664)
695 GET #1,K
700 RUN
799 REM "** DRAW IN DICE **"
800 FOR I=512 TO 767:POKE PMB+I,0:NE
XT I
805 POKE 559,46:POKE 53256,0
810 POKE 53248,0:POKE 704,52
815 FOR I=PMB+512+107 TO PMB+512+107
+9:POKE I,255:NEXT I
820 POKE 53277,3
899 REM "** DRAW IN PLAY AREA **"
900 ? #6;"ᴋ":POKE 756,CHSET
905 POSITION 0,2
910 ? #6;"     ''''' BASE"
912 ? #6;"ᐧ ᐧ   '  '"
914 ? #6;"ᐧ ᐧ   **) , ./01"
916 ? #6;"ᐧ ᐧ   ' ) '"
918 ? #6;"ᐧ ᐧ   ' ) '":REM INV CTRL
 M L.918
920 ? #6;"     ' ) '"
922 ? #6;"''ᐧ''''  ''''ᐧ,''"
924 ? #6;"' '     )   ᐧ '"
926 ? #6;"' ▼▼▼▼▼ ▬■■■■■■ '"
928 ? #6;"' ▼       ᐧ  ''"
930 ? #6;"''▼'''  ᐧ ''''ᐧ''"
932 ? #6;"' ▼      ' ᐧ '"
934 ? #6;"  ' ᐧ    _ b"
936 ? #6;"  ' ᐧ   ᐧ a"
938 ? #6;" 10/ ᐧ <** ¢ s"
940 ? #6;"  '    '  '  r e"
942 ? #6;" BASE '''''"
944 POSITION 7,23:? #6;"dice▼"
946 POKE DL+28,7
949 REM "** SET VARIABLES **"
950 RESTORE 992
955 FOR I=1 TO 16:READ A,B,C,D
960 DIR(I)=A:DIR1(I)=DIR(I):AC(I)=0
965 CC(I)=B:BP(I)=TL+C:SP(I)=TL+D
970 NEXT I
975 FOR I=1 TO 4
980 BASE(I)=4:HOME(I)=0
985 NEXT I
990 RETURN
992 DATA 1,206,123,163,1,207,103,163
,1,208,83,163,1,209,63,163
994 DATA 2,78,295,255,2,79,315,255,2
,80,335,255,2,81,355,255
996 DATA 4,14,93,91,4,15,94,91,4,16,
95,91,4,17,96,91
998 DATA 3,142,325,327,3,143,324,327
,3,144,323,327,3,145,322,327
999 REM "** TITLE PAGE **"
1000 ? "ᴋ":RESTORE 1010:FOR I=0 TO 6
3:READ A
1005 POKE 1664+I,A:NEXT I
1010 DATA 173,36,2,141,193,6,173,37
1011 DATA 2,141,194,6,160,180,162,6
1012 DATA 169,7,32,92,228,238,192,6
1013 DATA 173,192,6,141,10,212,141
1014 DATA 23,208,174,252,2,232,240
1015 DATA 238,172,193,6,174,194,6,16
9
1016 DATA 7,32,92,228,104,96,206,197
,2
1017 DATA 173,197,2,141,192,6,76,98,
228
1020 FOR I=0 TO 31:READ D:POKE 1536+
I,D:NEXT I
1025 DATA 104,104,133,204,104,133,20
3
1026 DATA 169,224,133,206,160,0,132
1027 DATA 205,162,4,177,205,145,203
1028 DATA 136,208,249,230,204,230,20
6
1029 DATA 202,208,242,96
1050 GRAPHICS 17:POKE 16,64:POKE 537
74,64:POKE 710,144:POKE 712,144
1055 DL=PEEK(560)+PEEK(561)*256
1060 POKE DL+11,2:POKE DL+14,7:POKE
DL+17,2:POKE DL+20,2:POKE DL+22,2:PO
KE DL+23,2
1065 POSITION 7,2:? #6;"page |"
1070 POSITION 16,6:? #6;"PRESENTS"
1075 POSITION 5,10:? #6;"the  chase"
1080 POSITION 5,13:? #6;"BY NIGEL LL
EWELLYN   (P) 1984":POSITION 8,17:?
#6;"PRESS ᴵ FOR INSTRUCTIONS"
1085 POSITION 7,20:? #6;"HOW MANY PE
OPLE WILL PLAY?"
1090 POSITION 12,22:? #6;"PRESS KEYS
 1 - 4"
1095 X=USR(1664)
1110 GET #1,K
1113 IF K=73 THEN GOTO 2000
1115 IF K<49 OR K>52 THEN 1095
1120 GRAPHICS 17:POKE 16,64:POKE 537
74,64:POKE 708,10:POKE 709,56:POKE 7
10,184:POKE 711,120
1125 PLAYERS=K-49:POSITION 0,5:? #6;
"NUMBER OF PLAYERS ";PLAYERS+1
1130 POSITION 4,10:? #6;"PLEASE WAIT
 ":POSITION 2,15:? #6;"setting up bo
ard"
1149 REM " **** initialise **** "
1150 DIM DIR(16),DIR1(16),AC(16),BP(
16),CC(16),CP(16),SP(16),Z(16),CL(16
)
1155 DIM BASE(4),HOME(4)
1160 POKE 106,PEEK(106)-12:CHSET=PEE
K(106)+4
1165 TL=PEEK(88)+PEEK(89)*256
1170 PMB=PEEK(106)*256:POKE 54279,PE
EK(106)
1175 X=USR(1536,CHSET*256)
1195 FOR I=8 TO 143:READ A:POKE CHSE
T*256+I,A
1200 NEXT I
1220 RETURN
2000 GRAPHICS 0:POKE 16,64:POKE 5377
4,64:POKE 752,1:POKE 709,8:POKE 710,
144:POKE 712,144
2002 ? "      THE CHASE - INSTRUCTIO
NS      ":? :? " CAUTION !!! ":? "THE
SE INSTRUCTIONS WON'T BE AVAILABLE"
2004 ? "DURING THE GAME AND IT MAY B
E WISE TO":? "MAKE A FEW NOTES!":? :
? " OBJECT OF THE GAME :FOR EACH PLA
YER"
2006 ? "TO MOVE HIS MEN ONCE AROUND
THE PLAY":? "AREA AND BRING THEM SAF
ELY TO HEAD-"
2008 ? "QUARTERS. IN THE COURSE OF T
HE GAME":? "EACH PLAYER TRIES TO CAT
CH HIS"
2010 ? "OPPONENTS BY SENDING THEM BA
CK TO":? "THEIR 'HOME BASES'.":?
2012 ? " TO BEGIN ":? "EACH PLAYER
CHOOSES ONE COLOUR.":? :? "PL. ONE =
BLUE     PL. THREE = WHITE"
2014 ? "PL. TWO = RED      PL. FOUR
= GREEN":? :? :? " PRESS ANY KE
Y TO CONTINUE ":GET #1,K
2016 ? "ᴋ    THE CHASE - INSTRUCTI
ONS      ":? :? " STARTING THE GAME
":? "PLAYER MUST THROW A 6 BEFORE H
E CAN"
2018 ? "MOVE A MAN FROM 'HOME BASE'
TO THE":? "STARTING SQUARE OF HIS OW
N COLOUR."
2020 ? "EVERY TIME A PLAYER THROWS A
 6 HE IS":? "ENTITLED TO ANOTHER GO.
 THE MEN ARE"
2022 ? "MOVED AS MANY SQUARES AS SHO
```

9

THE CHASE CON'T

MAN ON":? "THE DICE.SQUARES ARE COUNT
ED WHETHER"

2024 ? "THEY ARE EMPTY OR OCCUPIED."
:? :? " TO CAPTURE AN OPPONENT THE
RE ARE"

2026 ? "TWO WAYS TO CAPTURE AN OPPON
ENT :-":? :? "1) BY RELEASING A MAN
FROM HOME BASE"

2028 ? "WHEN AN OPPONENT IS OCCUPYIN
G YOUR":? "STARTING SQUARE."

2030 ? "2) BY LANDING ON THE SAME SQ
UARE AS":? "YOUR OPPONENT WITH THE L
AST MOVE OF":? "YOUR GO."

2032 ? :? "   PRESS ANY KEY TO CON
TINUE ":GET #1,K

2034 ? "▐   THE CHASE - INSTRUCTI
ONS   ":? :? " TO CAPTURE AN OPPO
NENT CONT."

2036 ? "WHEN AN OPPONENT IS CAPTURED
 HE IS":? "AUTOMATICALLY REPLACED IN
 HIS 'HOME":? "BASE'.":?

2038 ? " TO ENTER HEAD-QUARTERS ▐":?
 "AFTER EACH MAN HAS MOVED ONCE AROU
ND":? "THE PLAY AREA HE WILL ENTER T
HE"

2040 ? "FINISHING AREA OF HIS COLOUR
. THE":? "AREA IS MARKED WITH ARROWS
.":? "TO ENTER 'HQ' PLAYER MUST THRO
W THE"

2042 ? "EXACT NUMBER OF MOVES ON THE
 DICE.":? "IF TOO MANY ARE THROWN TH
E MAN WILL"

2044 ? "MOVE IN AND OUT OF 'HQ' AND
MOVE":? "TOWARDS THE 'FINISHING CORN
ER'. ONCE"

2046 ? "HE REACHES THE CORNER HE WIL
L AGAIN":? "BE ALLOWED TO TRY AND EN
TER 'HQ'."

2048 ? :? :? "   PRESS ANY KEY TO
CONTINUE ":GET #1,K

2050 ? "▐   THE CHASE - INSTRUCTI
ONS   ":? :? " THE WINNER ▐":? "T
HE FIRST PLAYER WHO MOVES ALL HIS"

2052 ? "MEN INTO HEAD-QUARTERS IS TH
E WINNER.":?

2054 ? :? "┌─────────WARNING !!!
─────────┐":? "│ BE ALERT WHEN YOU
MOVE YOUR MEN, │"

2056 ? "│ BECAUSE ONLY ONE MAN CAN O
CCUPY A │":? "│ SQUARE. SO IF YOU LA
ND ON ONE OF │"

2058 ? "│ YOUR OWN MEN HE WILL BE SE
NT BACK │":? "│ TO YOUR 'HOME BASE'.
    │"

2060 ? "└─────────
─────────┘":? :? " ALL PROMPTS ARE
GIVEN ON SCREEN"

2070 ? :? "   PRESS ANY KEY T

0":? " RETURN TO TITLE PAGE
":GET #1,K

2080 GOTO 1050

3052 REM "** DATA FOR CHARACTERS **"

3055 DATA 0,0,0,24,24,0,0,0

3057 DATA 0,6,6,0,0,96,96,0

3059 DATA 6,6,0,24,24,0,96,96

3061 DATA 0,102,102,0,0,102,102,0

3063 DATA 102,102,0,24,24,0,102,102

3065 DATA 102,102,0,102,102,0,102,10
2

3067 DATA 0,170,84,170,84,170,84,170

3069 DATA 0,16,56,124,254,56,56,56

3071 DATA 0,56,56,56,254,124,56,16

3073 DATA 0,16,24,252,254,252,24,16

3075 DATA 0,16,48,126,254,126,48,16

3097 DATA 0,254,198,222,198,246,198,
254

3099 DATA 0,0,174,170,234,170,174,2

3101 DATA 0,254,238,238,238,238,238,
254

3103 DATA 0,254,194,250,226,222,194,
254

3105 DATA 0,254,194,250,194,250,194,
254

3107 DATA 0,254,222,222,214,194,246,
254

THE CHASE
By Nigel Llewellyn

   For those of you who enjoy more s
edate or traditional games for who w
ould like a good family game for kup
to for players, here is THE CHASE.

   The game is based on the popular
board game of 'Ludo' and each player
has four counters of one colour and
must release them from 'Base' onto
the starting square of their own col
our. The counters are then moved aro
und the play area to arrive at 'Home
' (Headquarters). The first player t
o move all his counters into Headqua
rtaers is the winner. As with Ludo,
if you land on a square which is alr
eady occupied by an opponent, you ca
pture that square and your opponent'
s counter must be returned to Base.
The game differs from Ludo in that o
nly one counter can occupy any squar
e so that if you are unlucky enuough
 to land on a square already occupie
d by one of your own counter thus re
turning it to Base.

   More detailed instructions are in
cluded in the program and prompts ae
shown on screen throughout the game
. No joysticks are required.

MARCH MEETING

7;30 PM

WED. THE 11TH

SOUTH EUGENE

HIGH

Data Flow: Receiver has CRC Option, Sender Doesn't

```
SENDER        RECEIVER
  <---        <C>
times out after 3 seconds,
  <---        <C>
times out after 3 seconds,
  <---        <C>
times out after 3 seconds,
  <---        <C>
times out after 3 seconds,
  <---        <nak>
<soh> 01 FE -data- <xx> --->
  <---        <ack>
<soh> 02 FD -data- <xx> --->   (data gets line hit)
  <---        <nak>
<soh> 02 FD -data- <xx> --->
  <---        <ack>
<soh> 03 FC -data- <xx> --->
 (ack gets garbaged) <---    <ack>
  times out after 10 seconds,
  <---        <nak>
<soh> 03 FC -data- <xx> --->
  <---        <ack>
<eot> --->
  <---        <ack>
```

Here is a data flow example for the case where the receiver requests transmission in the CRC mode and the sender supports the CRC option. This example also includes various transmission errors. <xxxx> represents the 2 CRC bytes.

Receiver and Sender Both have CRC Option

```
SENDER        RECEIVER
  <---        <C>
<soh> 01 FE -data- <xxxx> --->
  <---        <ack>
<soh> 02 FD -data- <xxxx> --->   (data gets line hit)
  <---        <nak>
<soh> 02 FD -data- <xxxx> --->
  <---        <ack>
<soh> 03 FC -data- <xxxx> --->
(ack gets garbaged) <---    <ack>
  times out after 10 seconds,
  <---        <nak>
<soh> 03 FC -data- <xxxx> --->
  <---        <ack>
<eot> --->
  <---        <ack>
```

Armed with this information, you should be able to easily implement CRC and/or Ymodem into a terminal program. For 8 bit users, the following assembly source code can be used to calculate the CRC value on a 128 byte block.

```
;CRC.M65 - written for MAC/65 by Ralph Walden. This takes a 128 byte block at
BLOCK and calculates the CRC and returns with the value in $D8 and $D9.
;
.OPT NO LIST
    *= $8000
    .LOCAL
BLOCK = $9000  ;block address
PTR =  $D4
COUNT = $D6
```

```
CRC =  $D8
    LDA # <BLOCK ;low byte
    STA PTR
    LDA # >BLOCK ;high byte
    STA PTR+1
CALCRC LDA #0  ;zero CRC
    STA CRC
    STA CRC+1
    LDA #128
    STA COUNT
    LDY #-1
MAINLP DEC COUNT
    BMI END
    INY
    LDA CRC+1
    EOR (PTR),Y
    STA CRC+1
    LDX #8
SECONDLP LDA CRC+1
    BPL SHFT
    LDA CRC
    ASL A
    EOR # <$1021
    STA CRC
    LDA CRC+1
    ROL A
    EOR # >$1021
    STA CRC+1
CHECKSECOND DEX
    BNE SECONDLP
    BEQ MAINLP
SHFT ASL CRC
    ROL CRC+1
    JMP CHECKSECOND
END RTS
```

-- Ralph Walden, ACE Sysop

FAST

Migraph FAST is a product that contains tools known as desk accessories, which can be used with other programs you run on your ST computer. *FAST* contains these tools: ST-DOS, an MS-DOS emulator in a window; ST-Editor, a version of the text editor microEMACS; Card File, a rolodex type file system; along with a Calendar, Clock, Calculator, and ASCII table.

Desk accessories, for the most part are used to make using your computer easier, and more efficient. *FAST* takes some of the most common tools available and puts them instantly at your fingertips. By combining GEM and *FAST*, you have a more powerful, flexible, and complete environment to work in.

FAST runs on an Atari 520ST or 1040ST with at least one floppy or hard disk drive. A monochrome (high resolution) or color (medium and/or low resolution) monitor or even a television (low resolution only). And if you are concerned with conserving or have no use for the Card File, you can save about 18K of memory by using the version of *FAST* that Migraph has provided without the Card File in it.

FAST runs like most other accessories for the ST in that it is accessed from the DESK menu. Double clicking on the FAST option will a window listing the *FAST* tools available. In turn each of these may be accessed by double clicking on the entry or pressing the function key listed for the tool you want to use.

Pressing the F1 key brings us to ST-DOS, which stands for ST (as in 520ST) Disk Operating System. ST-DOS permits you to control all aspects of disk operation that are difficult or

impossible from the GEM desktop. Also ST-DOS makes desktop operations available while you are running your GEM programs, such as disk formatting, copying or renaming files, or viewing files. ST-DOS lets you organize your files, and can give you disk names for easy identification. This feature alone may be very useful to hard disk drive owners.

The F2 key is used to access the ST-Editor (which also may be entered by typing EDIT in ST-DOS). ST-Editor is a text editor that allows you a number of ways to change text quickly. There is no mouse interaction, as all the commands are accessed from the keyboard in combination with the Control or the Esc keys. Anyone familiar with microEMACS, *The Final Word* or *Mince* will be familiar with the command structure of ST-Editor.

Tapping the F5 key or double clicking Address Book will place you in the Card File. It comes pre-structured to resemble a set of cards on which you write the names, addresses, and telephone numbers of anyone that you contact. Putting them in you Card File assures that they will never be lost, damaged, coffee stained, or otherwise destroyed. The Card File can even dial the phone numbers if you have a Hayes-compatible modem setup. Of course, you can change the format of the Card File if you like, the only restriction is that fields 4 or 5 be telephone numbers in order for the autodialing feature to work.

This brings us to the four secondary tools *FAST* provides for the ST user. The Calendar, which can display any month from January 1980 to December 2099. When first activated the Calendar will display the month and year of the current date. Here is where FAST could have gone beyond the normal calendar, by adding appointments, or even highlighting the current date but chose not to. Pressing F1 while the calendar is displayed will print out month by month for that year. The Clock is simply that a clock in it's own window, displayed in a 12 AM/PM format. The Calculator is like any pocket calculator that performs basic mathmatic operations and contains a memory function. The Calculator operations can be activated with the mouse or keys on the keypad. Then there is the ASCII tool, which displays a list of characters in the American Standard Code for Information Interchange (ASCII) format. There are four table columns displaying the Decimal value, Hexadecimal value, Character picture, and Description.

If tools are something you can't live without, or if you feel that this product is just what you need to become more productive then Migraph will be more than happy to help you be a FAST ST user. Available for $49.99 from Migraph Inc., 720 S. 333rd (201), Federal Way, WA 98003, 1-800-223-3729 (order line).

-- Buddy Hammerton

BBS NEWS

You may notice something odd about the files on the ACE BBS. Most of them are smaller then they are on any other BBS (unless they got them from us). The reason has to do with a special ARC utility I created for ACE. This program tries out a large number of different crunching routines and selects the most efficient (ARC.TTP uses one and ARCA.TTP uses two). It's quite time intensive. I set up a batch utility to re-ARC all the ST files on the BBS and it took 9 hours to run. The result is

that our files are smaller. That means less time for you to download them (cheaper phone bill!).

For a BBS to be truly successful, you need to get users on and off as quickly as possible. By doing so, you free up the phone lines so that more users can call. A recent addition to the OASIS BBS program that ACE uses has greatly cut down on the time our regular callers spend on the board. Message base 4 and 5 describe new 8 and 16 bit files respectively. But rather then reading the description and then having to go to the download section to find the file, you can download it from the message base using the "Q" (quick download) command. Once you have downloaded the file, you will be returned to that message and can continue. This has several advantages. It allows password holders to use the "*" command to keep track of both new messages and new files. It gives 29 lines to describe the file. It allows the user to download without ever having to go to the download section to search through the files. If you've ever called an Amis or Michtron board, you know how much time is wasted listing out hundreds of filenames to see if you can spot anything new. On ACE, keeping track of new files is the same as keeping track of new messages. One command does it all.

By the time you read this, the BBS should be using a hard disk again. We have had numerous problems in converting over to a larger hard disk, leaving us with only floppy disks for several weeks. I still don't know what the final size will be, but we're trying to get 30 megs of storage. With the larger hard disk and the more efficient ARC routine, we should have enough storage space for at least a month or two...

Part of switching over to a new hard disk involved the purchase of an MIO interface from ICD. This unit combines a hard disk interface, parallel printer port, RS232 port, and 255K RAM disk in one device. I have mixed feelings about the MIO. The BBS would not run on it even though the BBS does work with an 850, ATR, R-verter, and P:R: connection. The problem was that with the MIO, the BBS could no longer hang up the phone by dropping the DTR line. I modified the BBS program to handle that problem only to have the MIO lock up when I tried to send a command to the modem while the DTR line was low. Once that was fixed, I found that key repeat was severely limited. This was an odd problem, because the cause is that the MIO is too fast. Unlike the 850, the MIO can do a status check almost as fast as the BBS checks for key input. The result is a loop that spends a large part of it's time doing a status check with the vertical blank turned off, which means no key repeat. The cure for that was to turn the Sparta DOS key buffer on. On the good side, the MIO is faster. Downloading a 20K file took 15 seconds less on the MIO. It can close and open the modem (needed to check for carrier) so fast that a flashing "M" the BBS uses whenever the modem is opened/closed became a solid "M" rather then flashing. The MIO goes up to 19,200 baud, which halves the time I need to upload files to the BBS using a null modem cable from my ST (yes, the BBS really will run at 19,200 if the terminal program can keep up). Also, the R: handler is in ROM which takes up less memory. Right now the MIO is in for repairs. I will talk more about it in the next issue.

The ACE BBS is here to serve you. We have no upload requirements. Give us a call and download to your hearts content! Remember, our files are smaller, so you'll spend less time downloading from us. We support Ymodem protocol

(along with standard Xmodem and CRC) for the fastest downloading. ACE BBS, (503) 343-4352, 300/1200/2400 baud, 24 hours, Sunday-Friday, password and ACE membership required on Saturday.

-- Ralph Walden, ACE Sysop

ST-Pool

ST-Pool is a distinctive variation on a very familiar game, billiards. Upon loading the game into your ST you are shown a pool table, a rack of balls, the cue ball, and a cue stick. ST-Pool will let you create a rack of balls from the many variations of pool played throughout the world, and has the ability to save and recall all these racks, at will. There is also the ability to put "english" on the ball, or hit it somewhere other than the center, which allows the ball to spin in different directions.

ST-Pool has also included some nice touches to enhance the playability of the game. It allows you to change the table color, resize the window, and pull down GEM accessories. The balls roll realistically on the table, and for the most part bounce at the proper angles. All in all *ST-Pool* is a fascinating game for those who like to visit the pool hall and hate all the smoke and dim lights.

ST-Pool is available form Shelbourne Software Systems, 7221 Rising Sun Ave. Suite #191, Philadelphia, PA 19111. Price: $34.95 + 3.50 s&h.

-- Buddy Hammerton

Dots-Perfect Plus a Magic Apple

For the many thousands of us who purchased an Epson FX-80 printer and now wish it had a new NLQ (near letter quality) mode, there is a product on the market you should know about. It's called *Dots-Perfect* by Dresselhaus Computer Products, 837 East Alosta Avenue, California 91740. Phone (818) 914-5831. *Dots-Perfect* sells for $79.95. Dots-Perfect is a set of replacement chips for the Epson FX-80, FX-100 or JX-80 printers with versions also available for the MX-80 and RX-80 series. Contact Dresselhaus Computer Products for the specific features of the MX-80 and RX-80 versions.

My first impression is the packaging is very professional and appears to be a quality product. The packaging, in this case, tells the truth. *Dots-Perfect* is an excellent value. The owners manual gives clear and concise installation instructions, including photos of the various configurations you may find inside your printer. I find the photos more accurate and helpful than drawings. The complete installation took me twenty minutes. No soldering is needed and no special tools are required. *Dots-Perfect* has a one year warranty and the manual says "Epson America has determined that proper installation of Dots-Perfect... will not void the printer warranty". This in itself gives me confidence in the product. *Dots-Perfect* adds NLQ mode and lets you to change fonts by using the ON-LINE, FF and LF buttons as well as allowing standard software control. I've seen NLQ printing from software upgrades and from some hardware upgrades and I was not impressed. They usually looked darker than normal but sort of jagged, or just

dark and thick. I found I could have better looking print by using bold or double strike modes. This was before I saw the output of *Dots-Perfect*. I was surprised and very impressed when the NLQ looked more like Letter-Quality than Near Letter-Quality! The print looks like it was done on a typewriter using a fabric ribbon. Sure, you can tell it's dot matrix on close examination, but it's the best NLQ I've seen on any nine pin dot matrix printer.

A big plus is the font control. You can set/reset the font without programming whenever the printer is on-line. The options give you condensed, elite, proportional, double-wide, emphasized, italics, underline, fine print, 8 lines per inch, plus quite mode, slash zero, perf-skip and margin control. If you have the JX-80, you can also select your colors. All this from the three control buttons on the printer. There is a beep for each setting so you always get positive indication your selections have taken effect. With *Dots-Perfect* you don't have to write a program to initialize the printer for each font change not supported by your word processor. For example, users of *Bank Street Writer* on the 8-bit Ataris can print letters in draft until ready for a final copy. Then just press FF and print again, this time in NLQ mode. If this were all *Dots-Perfect* could do it would be a great bargain, but there's more. You've heard of Magic Sac, the ST upgrade to the Macintosh, produced by Data Pacific. One problem with emulating a Mac is the Mac expects to be printing to an Imagewriter and puts out Imagewriter control codes. Surprise of surprises! *Dots-Perfect* will emulate an Imagewriter on the Epson. *Dots-Perfect* redefines the function of several of the DIP switches inside the printer and the manual clearly explains the new functions and how to set them. One of the DIP switches now switches from Epson mode to IBM or Apple mode. Flip the switch and your Epson accepts Imagewriter control codes. I've tested *Dots-Perfect* using MacWrite and printing numerous fonts such as bold, underline, italic, subscript and superscript as well as the more exotic outline, shadow and Cairo fonts. I also did some graphic dumps out of MacDraw and everything worked without a hitch.

Do you want NLQ on your Epson? Do you want to to change fonts at the touch of a button? Do you want to emulate an Imagewriter? Any one of these reasons make Dots-Perfect worthwhile and you get them all. Get *Dots-Perfect*! My compliments to Dan Dresselhaus, the inventor of *Dots-Perfect*. Thank you for an excellent product at a fair price.

-- Steve Golden

GFA BASIC

Finally, a usable BASIC language for the ATARI ST! This progammming package, distributed by MICHTRON has about every feature you could ask for to program your computer.

This version of BASIC has over 240 commands and is similar to GW BASIC. With many one-line commands you can control windows, alert boxes, the mouse, date, time, fileselect, and character location in a string. You can also create drop down menus with a short routine. The best way to describe *GFA BASIC* is to compare it to what most of us know from the ATARI 8-bit, ATARI BASIC. First of all, there is only one command allowed per line and takes some getting used to, but it is a step towards a more structured language like Pascal.

Second, there are no line numbers. Third, the speed of execution is obvious compared to *ST BASIC* and *ATARI BASIC* (i.e.,this loop executes in 1/2 second): For X = 1 to 10000: Next X

Unlike *ST BASIC* there are no windows to be redrawn continuously. The top two lines of the screen are labeled as function keys commands like Load, Save, Run, etc. Then, all that is required is to type in the program, and you can abbreviate the entries, that is, DEFM becomes Defmouse on the screen. If you want to try a command in the immediate mode, 'escape' flips the screen to an OK which is the output screen.

How about number conversion? You can convert binary to hexadecimal to octal with BIN$, OCT$, DEC$. Also, the program handles 11 digit precision.

Errors are clearly displayed in alert boxes in English and you can halt any BASIC program so there are no endless loops so lock up is a thing of the past.

Another unusual feature is the ability to run a standard program from inside your BASIC program. As an example, I ran a public domain copy program and *SIDEWAYS* from inside a simple *GFA BASIC* program, so it is possible to incorporate existing standalone programs into a *GFA BASIC* one.

The program itself is only 55k long and does not have the irritating slowness to load and save BASIC programs. In addition, when selecting a file to save or load, the standard GEM select box appears for that purpose. There is also a run-only version of *GFA-BASIC* that can be distributed as public domain so anyone can run the *GFA-BASIC* programs even if they don't own the software.

The documentation is fairly complete and there is a page and an example for each command. The error messages, editing errors and bombs are briefly defined in an appendix. I want to see more info on GEM use, though.

Your next question is, can I run my *ST BASIC* programs with *GFA*? No. The package comes with a conversion program but it is still under development. I have tried to convert a few and it is difficult at best, especially if there are graphics involved, but it is possible and will become easier, I'm sure, as utilities are developed.

In short, I bought the program on MICHTRON's past products alone, and was not disappointed. This version of BASIC is far superior and bug-free than *ST* or *ATARI BASIC* and could become a standard for the ST, since it incorporates the commands most of us are familiar with, and many more. It appears to have the power of C and gives the BASIC programmer access to all those 'foreign' capabilities of GEM, AES and VDI. The cost? Ok, $79.95 list and on a 10 point scale I'd say 9.5.

--Bob Gheesling

5.25 FLOPPY ST
SF314 COMPATIBLE FLOPPY DRIVE FOR ATARI ST

It is possible to use your old 5.25 inch floppy disks with your

ATARI ST, and the computer treats it exactly as an SF314 double-sided, double density drive (720k).

The reference for this project is ANTIC magazine 11/85, titled "ST USES IBM DISK FILES" by David Small. The article talks about using a Tandon 100-2 floppy drive to read IBM text files and lightly covers this project. The main problem was you have to open your existing micro floppy drive, solder a jumper inside and modify the 34 conductor cable. With the following information, you can plug the 5.25 inch floppy drive directly into the ST without any other modifications. The only limitation is it must be drive B, because there is no OUT plug for the next drive. So, I use mine as drive B: and everything works great.

Here's what you'll need:
TANDON 100-4 Floppy drive (double sided, quad density, 720k) (You can use any brand, but you'll need documentation for drive select and pull up resistor.) $39-$100 Mail Order
POWER SUPPLY and enclosure for above. $40-$50 Mail Order
SIX FOOT, 14 PIN drive cable for ST (available any ST supplier, $12-20)   34 PIN CARD EDGE CONNECTOR $4-$5 (electronics store)

Rumor has it that 720k half-height drives were not that reliable, so I used a full-height drive, with a vertical enclosure. The drive cable can be cut to whatever length you want, but if you cut the cable in half, you'll have another cable to make floppy drive for a friend. (Make sure 3 feet is long enough for your setup, though)

The top of the 34 pin connector is numbered 2,4,6..34, the bottom is numbered 1,3,5,7...33. You'll need to look in the back of the ST OWNERS manual for the drive cable pin locations because of its strange pattern.   Now, one end has the 14 pin disk drive connector the other end is just cable, so strip the 13 wires and connect to 34 pin card connector as follows.

ST CONNECTOR	34 POS. CARD CONNECTOR
1	30
2	32
3	NO CONNECTION
4	8
5	10
6	12
7	15
8	16
9	18
10	20
11	22
12	24
13	26
14	28

On top of the Tandon 100-4 drive, is the read/write board the connector you just made fits on. Now the only thing remaining is to set the R/W board to look like an Atari drive by setting the drive select to A: and removing the pull up resistor.

This is done by examining IC socket 1E. If there is a breakable tabset in it, then break all but the connection from pins 2-15. If socket 1E is empty then push in a wire from pins 2-15. Then, just below this socket is resistor R30. Cut or desolder one end, and that's it.

Originally, I followed nearly what the ANTIC article did, that is, soldering a jumper inside the A: ATARI drive. But that left me with an ATARI drive which is no longer factory standard or compatible.

With some experimenting I found the way to modify the new 5.25 in. without having to touch the ATARI micro drive, so this floppy drive will work with the 1040ST as well, without modifying your existing hardware.

If you need more information, see the ANTIC article for help or you can leave me a message at the BIG TOP BBS (313-291-2057). I have been using my 5.25" floppy drive for 5 months now without a hitch, and have used diagnostics with 2ms seek times without failure. Good Luck!

-- Bob Gheesling

USER HINTS

Those of you submitting articles on disk, please respect the following request: You will make things much better on the editors if you save the text file in ASCII form without any embedded formatting commands. Especially ST users writing in 1st_Word. Please save the file with the "WP" mode toggled off. Thankyou.

My mouse quit working after some particularly rough treatment. I couldn't get the mouse to move to the right. I took the ball out and cleaned it with 99% alcohol. Still didn't work. So I unscrewed it and looked inside. I found the axel which goes through one of the metal bushings which turn on the mouse ball was bent. Soft metal! I stuck my pocket knife down there and straightened it a bit (the right tool for the right job!). Now the axel doesn't bind as it turns, and so the wheel at the end turns freely now. The mouse works fine. I wasn't careful applying pressure against the plastic housing for the mouse ball when I straightened the axel. I suppose you could crack that plastic if you apply too much pressure.

-- Jim Bumpas, ACE Co-editor

Q & A
(Reprint: Abacus, Feb., 1987)

Q: I renamed a file to the same name as another one on the disk. Now I have 2 files with the same name. When I try to rename one, they both are renamed. When I try to delete one, they both disappear. What can I do to salvage the files?

A: I guess we've all done this a few times. The answer is fortunately pretty simple. Get DOS 2.5. If you want to stay with DOS 2.0 for some obscure reason (it's faster) then there are 2 solutions. First, you can use a disk sector editor (i.e., *Diskey*, *Disk Wiz*, *Sherlock 1050*, etc.) to go to the directory in sectors 361-368 and actually change the name of one of the files. Or you can modify DOS 2.0 so it will rename only the first file. To do this boot into Basic using a DOS 2.0 disk. Put in the disk with offending filenames and type the following: "POKE 3111,76:POKE 3112,234:POKE 3113,18" and RETURN.

Now type DOS and the DOS menu should load in. Rename the file in the normal way. Only the first file should be renamed. Your disk is recovered. If you want to save this modified DOS

so you won't need to remember those POKEs format a blank disk using the "I" command and then write DOS using the "H" command. Label this disk to reflect it is a DOS 2.0 modified to rename single files. You can then use this DOS for all your normal business. I have never heard of this patch causing compatibility problems.

Q: I crashed an enhanced density (1050 dual density) disk. The VTOC is ruined. How can I recover it?

A: The answer to this one is simple. "I don't know." There are good disk utilities for single density disks. *Diskey* will automatically rebuild a VTOC. But there is nothing like it for the enhanced density disks. *Sherlock 1050* from Antic has a lot of features, but it won't rebuild a VTOC. Of course, you can rebuild it manually with *Sherlock 1050* and some knowledge of the disk structure. Does anyone out there have any other suggestions?

-- Charles Cherry

XAGON

Bubbling pots of life, horned balls, cash bags for extra points, flashly octapods and what I call flashing randoms. A ball caped Pacman-type characater playing a Qbert-type roll in a game as good as any game I have seen on a store shelf or in an arcade.

XAGON-- an 8-bit binary game from M.A.C.E. of Australia by D. Pentecost. In Qbert, you bounce from square to square changing the color of the squaure while looking out for baddies. In Xagon, oubounce around on raised pentagons. These pentagons must all be at the same level before y0u can go up the next screen level.This is acheived by bouncing on them. Xagon's hero has the ability to release the pentagons in self defense by the use of the firing button and moved in the direction of the pentagon to be released. Keep in mind those you release must be bounce back down. Teleport pads and the tumbling teleports will both help and hinder you in getting away from Qctapoids. hopping robots and what ever comes along. So far I have only made it to Level 14, so look out for the baddies and the little things as well.

--Dick Young

** BEST OF ACE # 18 **
DCOPY.COM --Similar to Atari Basic Dup.Sys as seen on DVC Sample disk by Ralph Walden. It does most functions like copy files, whole disks; print directory to screen; etc.
SPEED.C --A bench mark for testing for speed among 'C' compliers.
CCADV1.OBJ --Charlie the Chicken needs help to get hatched. You must find out what egg he is in and have Mom Hen sit it overnight. You locate Charlie by spinning the eggs.
MERLIN --Merlin's Magic Square is a test of logic. The object is to light up all the numbers in as few moves as possible.
GRID --is a two player game. The object is to outscore your opponent by strategically placing your pieces.
LANDSCAP --Alien invaders descending one by one to the Landscape below. You can blast off and destroy them but you have limited missiles and fuel.
NUTTY --Squirrel have to catch falling nuts on a pogo stick.
DRAGON.COM --Trap the dragon by moving blocks walls to surround the dragon. Push the blocks in until you can squeezed him to death.
COLDUMP --Graphics 7+ screen dump to a PX80 printer.
INTIME.ACT --An Action source code.   + MUCH MORE

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E.R.A.C.E.:   Nora Young

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